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The measures are moved by a handle or lever *e*, the motion of which is limited by the pins *g g*, which, while it presents one under the hopper to receive, places the other immediately over the discharging hole for delivery, so that the two operations of filling and discharging are going on at one and the same moment. The bottom of each measure is contracted, to retard, in a small degree, the discharge, so as to secure one measure to be filled before the other is emptied. A hole is cut in the top plate, over the discharging measure, by which it may be ascertained that it is always full, as well as that the whole contents are delivered: *x* is the handle.

Machines of the size of the model have been in use for six months past, for filling cartridges, and a boy delivers with ease 12,500 measures daily from one machine, in the most accurate and perfect way possible, and supplies his hopper himself.

Fig. 16 is a view, and fig. 17 is a section, of the instrument.

Fig. 18 shows the measures, with the plate and axis to which they are attached.

Fig. 19 is a top view of fig. 18, and fig. 20 is a top view of fig. 16, the hopper being represented by a dotted circle.

VIII.—SLIDING RUDDER.

The LARGE SILVER MEDAL *was this Session presented to Mr.* JOSEPH HILLMAN, *of Deptford, for a* SLIDING RUDDER, *a Model of which has been placed in the Society's Repository.*

SHIPS of war, and other large vessels, if they happen to strike the ground when riding heavily at anchor, or by tailing on a sand-bank, are very liable to injure the rudder, by tearing it away from its fastenings. To prevent this, Mr. Hillman proposes, that the lower part of the rudder should be made capable of sliding up into a cavity prepared to receive it, and of descending by its gravity into its original position, as soon as the vessel gets clear again. The changes in the construction of the rudder which Mr. H.'s plan will occasion, are represented in the subjoined figures, of which No. 1 is a broadside view, and No. 2 an aft view of the lower part of the rudder, together with the stern-post.

Fig. 1.

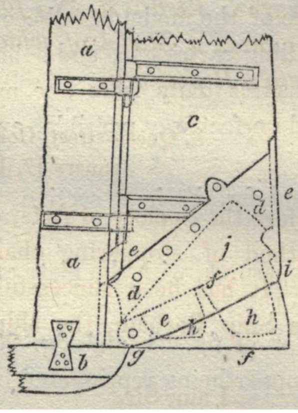
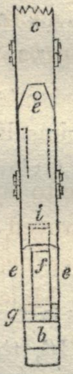


Fig. 2.



a a the stern-post; *b* part of the keel; *c* the rudder, the bottom of the rudder is cut away to the dotted lines *d d; e e e* is a hollow metal case, bolted on by the five bolts above *d d; f f* is a metal segment, turning on the pin *g*, and sliding within the case *e e;* this segment is made hollow from the top, in two compartments, as shown by the dotted lines *h h;* it falls down by its own weight, as shown in the figure, and is prevented from coming farther by a projection from its top, lodging on a step at *i*, within the case *e e*. The cavity *j*, from the bottom of the case *e e* to the dotted lines *d d*, is made large enough to receive the whole of the segment *f f;* if, therefore, the vessel should touch ground, so as to endanger the rudder, this segment would slide into the recess, and thereby avoid the blow, and fall out again to restore the length of the rudder when clear of the ground.

IX.—STOPPER FOR A CHAIN-CABLE.

The SILVER VULCAN MEDAL *was this Session presented to Mr.* J. B. KOOYSTRA, *Lieut. R. N., for his* STOPPER FOR A CHAIN-CABLE, *a Model of which has been placed in the Society's Repository.*

3, Queen-street, Golden-square,
January 17, 1827.

SIR;

I BEG leave to lay before the Society of Arts, &c. a model of an improved method of stoppering chain-cables in ships' lower decks. It has been successfully used on board His Majesty's Ship Barham, the ship I am appointed to.

I am, Sir,
&c. &c. &c.
JUSTUS B. KOOYSTRA.

A. Aikin, Esq.
Secretary, &c. &c.

The box containing the chain-cable is placed on the lower deck of a ship of war, and the chain passes through a stopper, formed of an iron hook or clip, secured to one of the beams that support the main-deck, by means of a bolt that passes through an eye in one end of the stopper. The stopper is thus placed in a horizontal position, and is